

Chapter 6

PLAN IMPLEMENTATION AND FUNDING

There are seven water source options that provide opportunities to address water supply issues in the UEC Planning Area. These options reflect the goals of UEC Water Supply Plan Advisory Committee.

The seven water source options are:

- Surface Water Storage
- Conservation
- Aquifer Storage and Recovery
- Wastewater Reuse
- Floridan Aquifer
- Utility Interconnects
- SAS Wellfield Expansion

The advisory committee suggested that the District consider a number of water resource development recommendations. The District reviewed each one and presents the following recommendations. The recommendations associated with each option are organized into water resource development recommendations and strategies, and water supply development plan suggestions. Each water source option has a set of water resource development recommendations that are specific implementation strategies. These recommendations support water supply development and were determined by the advisory committee to be the responsibility of the District, whereas the plan suggestions in the water supply development category were determined to be the responsibility of local governments, water suppliers, and water users. Plan suggestions may be eligible for District funding assistance if they meet the statutory requirements explained later in this chapter.

Activities by the District include regulation; research and testing; operations and construction; and cooperative funding of water supply development projects with local governments and water users. Activities by local governments, water suppliers, and water users will be determined at the local level to more effectively meet individual needs.

Costs and funding sources are provided for each water resource development recommendation. Funding includes both monetary sources and human resources expressed in full-time equivalencies (FTEs). Monetary sources of funding are described in dollar amounts and include monies from the District and other agencies, while FTEs represent the estimated hours to be worked by District staff. The funding approach for the UEC Water Supply Plan as well as potential funding sources for water resource development recommendations and water supply development suggestions are described later in this chapter. The recommendations contained in this plan are subject to District Governing Board budgetary appropriation for future fiscal years.

WATER RESOURCE DEVELOPMENT RECOMMENDATIONS AND STRATEGIES

The water resource development recommendations are introduced with estimates of the quantity made available for each water source option. The volume of water that could be withdrawn by any specific user must be determined through the District's consumptive use permitting program. Analyses indicate the options are sufficient to meet the needs of the UEC Region through the planning horizon.

Surface Water Storage

Freshwater discharges from the C-23, C-24, and C-25 (1964-1995) and C-44 (1952-1995) canals averaged 304 billion gallons per year or 833 million gallons per day (MGD). These discharges are influenced primarily by rainfall and vary significantly over the period of record. Rainfall over this period averaged approximately 51 inches. In addition, discharges from the C-44 canal are influenced by regulatory discharges from Lake Okeechobee. These discharges may be less today based on changes in the Lake regulation schedule. Theoretically, a significant amount of the 833 MGD could be stored and made available for water supply, if sufficient volumes of storage were constructed. In addition to the urban and agricultural water supply needs, the needs of the environment (estuarine systems) have to be accounted for.

The advisory committee made the following recommendations to support water resource development through surface water storage:

- 1.1. Recommendation/Strategy: Complete the Indian River Lagoon Restoration Feasibility Study by 2001, pursuant to the project study plan. The basin storage figures from the Regional Attenuation Force Task Force should be used as preliminary volumes in the alternative evaluation phase of this study. Implementation of this study will result in additional water resource development projects and future expenditures.

Total Cost: \$6.1 million

Funding Source: SFWMD (\$3.05 million) and USACE (\$3.05 million)

SFWMD share:

Cost	FY96	FY97	FY98	FY99	FY00	FY01	FY02
Dollars (\$1,000s)	\$0	\$148	\$946	\$297	\$141	\$16	\$0
In-kind Service*	\$96	\$627	\$462	\$234	\$76	\$26	\$0

*In-kind service includes FTEs, contracts, equipment and overhead.

Source: Indian River Lagoon Restoration Feasibility Study - Project Study Plan, April 1996, Table 2 (Study Cost Estimate).

Implementing Agency: SFWMD and USACE

Subtasks:

- 1.1.a. Complete problem identification/initial plan formulation phase by October 1998.
 - 1.1.b. Complete alternative plans evaluation phase by October 1999.
 - 1.1.c. Complete engineering design and report preparation phase by March 2001.
- 1.2. Recommendation/Strategy: Where appropriate and feasible, identify, design, and construct other regional attenuation facilities. This may result in additional water resource development projects and future expenditures.

Total Cost: 0.20 FTEs

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	0.00	0.00	0.20	0.00	0.00

Implementing Agency: SFWMD

Subtasks:

- 1.2.a. Upon completion of the Feasibility Study, determine if additional RAFs are needed by September 2000.
- 1.3. Recommendation/Strategy: The District will support the design and construction of the Ten Mile Creek Critical Restoration Project.

Total Cost: \$30 million

Funding Source: SFWMD, St. Lucie County, other public and private interests (\$15 million), USACE (\$15 million)

SFWMD and others share:

Cost	FY97	FY98	FY99	FY00	FY01	FY02
Dollars (\$1,000s)	\$0	\$100	\$3,500	\$3,500	\$6,500	\$1,400

Implementing Agency: SFWMD and USACE

Subtasks:

- 1.3.a. Complete Corps application package and conceptual design by December 1997 - completed.

- 1.3.b. Complete options on land purchase by January 1998 - completed.
 - 1.3.c. Complete vegetative and habitat surveys by April 1998.
 - 1.3.d. Complete design by March 1999.
 - 1.3.e. Receive permits by June 1999.
 - 1.3.f. Purchase land by December 1999.
 - 1.3.g. Begin construction by April 2000.
- 1.4. Recommendation/Strategy: The District will develop and adopt a minimum flow and level (which includes maximum discharges) for the St. Lucie Estuary, based on the salinity envelope concept. The desired salinity envelope will be met through managing freshwater discharges to the SLE. Based on the analysis to date, this would equate to an inflow range of 350 cfs to 1,600 cfs. The salinity envelope and associated inflows are being refined in the Feasibility Study and in development of the minimum flow and level for the SLE.

Total Cost: \$110,000 plus 5.75 FTEs

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
Dollars (\$1,000s)	\$100	\$10	\$0	\$0	\$0
FTEs	2.00	1.75	1.50	0.50	0.00

Implementing Agency: SFWMD and USACE

Subtasks:

- 1.4.a. Review data from oyster and seagrass survey and field and laboratory experiments (salinity tolerances) for input to model by October 1998.
 - 1.4.b. Create a model that integrates biology (survey data on oyster, seagrass, fish, etc.) and hydrology (field and laboratory data on salinity tolerances) for the St. Lucie Estuary by October 1998.
 - 1.4.c. Refine model with ongoing field and laboratory data (through 1999).
 - 1.4.d. Evaluate how changes in freshwater inflows affect distribution and abundance of key estuarine species which help establish criteria for significant harm (through 1999).
 - 1.4.e. Establish draft definition of “significant harm” by December 1999.
 - 1.4.f. Draft MFL for peer review by March 2000.
 - 1.4.g. Draft MFL for rulemaking by January 2001.
 - 1.4.h. Develop Prevention or Recovery Strategy, as required by Section 373.0421.
 - 1.4.i. Rule adoption by Governing Board by December 2001.
 - 1.4.j. Implement Recovery Strategy, if necessary.
- 1.5. Recommendation/Strategy: The District will evaluate increasing storage and conveyance in C-canals through maintenance of canals (sediment control) and remove depositions where appropriate.

Total Cost: \$1.08 million plus 4.15 FTEs

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
Dollars (\$1,000s)	\$0	\$79	\$0	\$0	\$1,000
FTEs	0.00	0.15	0.00	0.00	4.00

Implementing Agency: SFWMD

Subtasks:

- 1.5.a. Initiate field investigation of canals to identify shoaling and bank erosion by February 1999.
- 1.5.b. Establish cross sections in problem areas by April 1999.
- 1.5.c. Perform hydraulic analysis of canal conveyance capacity by May 1999.
- 1.5.d. Evaluate results of analysis by June 1999.
- 1.5.e. Publish study results by July 1999.
- 1.5.f. Initiate removal of sediment depositions by October 2001.

Aquifer Storage and Recovery

The volume of water that could be made available through aquifer storage and recovery (ASR) wells depends upon several local factors, such as well yield, water availability, variability in water supply, and variability in demand. Without additional information, it is not possible to accurately estimate the water that could be made available through ASR in the UEC Region. Typical storage volumes for individual wells range from 10 to 500 million gallons (31 to 1,535 acre-feet), (Pyne, 1995). Where appropriate, multiple ASR wells could be operated as a wellfield, with the capacity determined from the recharge and/or recovery periods. There are potentially many different applications of ASR; however, all store sufficient volumes (adequate volumes to meet the desired need) during times when water is available and recover it from the same well(s) when needed. The storage time is usually seasonal, but can also be diurnal, long-term or for emergencies.

The advisory committee made the following recommendations to support water resource development through aquifer storage and recovery:

- 2.1. Recommendation/Strategy: The District and USACE will evaluate the potential of co-locating ASR and surface water storage to supplement storage or enhance water supply, if required and cost effective. If RAFs are identified as preferred alternatives, this co-location evaluation will be conducted in the Feasibility Study.

Total Cost: FTEs are included in the Feasibility Study

Funding Source: SFWMD and USACE

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	---	---	---	---	---

Implementing Agency: SFWMD and USACE

Subtasks: Not applicable

- 2.2. Recommendation/Strategy: The District will evaluate existing water quality data for canal water in District databases for use in evaluating the potential for surface water ASR, if ASR is incorporated into the Feasibility Study preferred alternative. The Feasibility Study will conceptually evaluate ASR, but will not include a site-specific analysis.

Total Cost: 0.03 FTEs

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	0.00	0.00	0.03	0.00	0.00

Implementing Agency: SFWMD

Subtasks:

2.2.a. Collect and analyze data by July 2000.

2.2.b. Determine if water quality is suitable for surface water ASR by July 2000.

- 2.3. Recommendation/Strategy: The District will evaluate the potential of reactivating the District's Demonstration Project for Lake Okeechobee ASR well to collect data on surface water ASR. Also, the District will look at the potential of a public/private partnership for this project.

Total Cost: \$10,000 plus 0.06 FTEs

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
Dollars (\$1,000s)	\$0	\$10	\$0	\$0	\$0
FTEs	0.00	0.06	0.00	0.00	0.00

Implementing Agency: SFWMD

Subtasks:

2.3.a. Evaluate current condition of facility by June 1999.

2.3.b. Determine cost to reactivate facility by July 1999.

2.3.c. Determine cost effectiveness of reactivating versus closing facility by July 1999.

2.3.d. Document recommendations by August 1999.

- 2.4. Recommendation/Strategy: The District will continue working with EPA and FDEP to explore rule changes in federal and state underground injection control program to allow for (and facilitate) injection of untreated surface and ground water with ASR.

2.5.

Total Cost: 0.02 FTEs

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	0.02	0.00	0.00	0.00	0.00

Implementing Agency: SFWMD, EPA, and FDEP

Subtasks: Not applicable.

- 2.5. Recommendation/Strategy: The District will develop rules to address potential conflicts associated with the application of ASR and the existing use of the Floridan aquifer for water supply.

Total Cost: Cost incorporated in Recommendation 7.1 of Related Strategies

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	---	---	---	---	---

Implementing Agency: SFWMD

Subtasks: See Recommendation 7.1 of Related Strategies

- 2.6. Recommendation/Strategy: The District will evaluate the feasibility of injecting excess surface water into the Floridan aquifer for recharge where appropriate. The Feasibility Study will conceptually evaluate ASR, but will not include a site-specific analysis.

Total Cost: FTEs are included in the Feasibility Study

Funding Source: SFWMD and USACE

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	---	---	---	---	---

Implementing Agency: SFWMD and USACE

Subtasks: Not applicable

- 2.7. Recommendation/Strategy: The District will evaluate injection of surface water, and other sources of water, to increase freshwater head along the coast to decrease the potential of saltwater intrusion, where regional benefits are identified where appropriate. The Feasibility Study will conceptually evaluate injection of surface water, but will not include a site-specific analysis.

Total Cost: FTEs are included in the Feasibility Study

Funding Source: SFWMD and USACE

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	---	---	---	---	---

Implementing Agency: SFWMD and USACE

Subtasks: Not applicable

Floridan Aquifer

Analyses indicated the Floridan aquifer has the potential of supplying, at a minimum, sufficient water to meet all public water supply demands (64 MGD) through the planning horizon while meeting the supplemental water needs (125 MGD) of agricultural users during a 1-in-10 drought event. This assumes withdrawals will be obtained from existing or proposed wells in the agricultural areas, and from wells in proximity of existing Surficial Aquifer System wells for public water supply.

The advisory committee made the following recommendations to support water resource development through use of the Floridan aquifer:

- 3.1. Recommendation/Strategy: The District will remove the Floridan aquifer from the MFL priority list in the Water Management Plan.

Total Cost: 0.05 FTEs

Funding Source: SFWMD

Cost	FY97	FY98	FY99	FY00	FY01	FY02
FTEs	0.04	0.01	0.00	0.00	0.00	0.00

Implementing Agency: SFWMD

Subtasks:

- 3.1.a. Perform regional Floridan aquifer runs to reveal any water use related exceedances of the Floridan aquifer protection criterion by March 1997 - completed.
 - 3.1.b. Discuss recommendation to remove the Floridan aquifer from the MFL priority list with Florida Department of Environmental Protection by October 1997-completed.
 - 3.1.c. Remove Floridan aquifer from MFL priority list in the Water Management Plan by November 1997 - completed.
- 3.2. Recommendation/Strategy: The District will develop and implement a comprehensive regional Floridan aquifer monitoring network to collect the necessary information to develop relationships between water use, water quality, and water levels.

Total Cost:

Option A: In-house cost: \$159,400 plus 5.73 FTEs

Option B: Contracted cost: \$323,000 plus 4.33 FTEs

Funding Source: SFWMD

Cost*	FY98	FY99	FY00	FY01	FY02
Option A: In-house costs					
Dollars (\$1,000s)	\$0	\$0	\$78	\$64	\$18
FTEs	0.11	1.15	2.52	1.25	0.70
Option B: Contracted costs					
Dollars (\$1,000s)	\$0	\$0	\$112	\$199	\$12
FTEs	0.11	1.15	1.62	0.75	0.70

*Assumes 70 total network wells, including 5 new wells constructed by SFWMD staff using District equipment.

Implementing Agency: SFWMDSubtasks:

- 3.2.a. Define information needs by March 1999.
 - 3.2.b. Design monitoring network and document data collection procedures by May 1999.
 - 3.2.c. Initiate establishment of the monitoring network by October 1999.
 - 3.2.d. Initiate annual sampling and analysis by April 2000.
- 3.3. Recommendation/Strategy: The District will develop options for a volunteer or incentive-based Floridan well abandonment program.

Total Cost: \$148,000 plus 0.10 FTEs

Funding Source: SFWMD (\$37,000) and NRCS (\$111,000)

SFWMD share:

Cost	FY98	FY99	FY00	FY01	FY02
Dollars (\$1,000s)	\$37	\$0	\$0	\$0	\$0
FTEs	0.02	0.02	0.02	0.02	0.02

Implementing Agency: SFWMD and NRCS

Subtasks:

- 3.3.a. Develop statement of work for use of current budgeted monies by March 1998.
 - 3.3.b. Continue to evaluate options for a volunteer or incentive-based well abandonment program such as the Alternative Water Supply Funding Program.
- 3.4. Recommendation/Strategy: The District will work with FDEP and EPA to explore alternative desalination concentrate disposal options.

Total Cost: 0.03 FTEs

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	0.02	0.01	0.00	0.00	0.00

Implementing Agency: SFWMD

Subtasks: Not applicable

- 3.5. Recommendation/Strategy: The District will evaluate Floridan aquifer recharge areas (in central Florida and outside the planning area) and identify activities, if any, that could have a resulting negative effect on the Floridan aquifer in the UEC Planning Area.

Total Cost: Costs associated with this recommendation will be incorporated into the scope of the Kissimmee Basin Water Supply Plan

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	---	---	---	---	---

Implementing Agency: SFWMD

Subtasks: Not applicable

Surficial Aquifer System Wellfield Expansion

Analyses indicated that expansion of SAS withdrawals for public water supply, residential self supplied, commercial and industrial self supplied, and recreational self supplied beyond existing demands (66 MGD) is limited, especially along the coast. This assumes withdrawals will be obtained from existing wells, and where information was available, from proposed wells. However, there may be limited expansion potential on a project-by-project basis. The advisory committee made no recommendations.

Conservation

A 10 percent reduction (4 MGD) in projected public water supply and residential self supplied water use is estimated with implementation of the mandatory conservation measures through the planning horizon. There are also retrofit (incorporation of current water conservation measures into existing projects) opportunities in both agricultural and urban areas. Retrofitting the approximately 40,000 remaining acres of citrus that currently use flood irrigation to micro-irrigation could result in a reduction in water use of up to 25 MGD (actual savings may be less due to cooperative use of water within 298 Districts) in water demands. Approximately 100,000 acres have been retrofitted to micro-irrigation. In urban areas, the following water savings could occur per 10,000 units installed: toilet, 0.24 MGD; showerhead, 0.50 MGD; and rain switches, 5.73 MGD. It is also estimated an urban mobile irrigation lab visiting 200 homes could reduce outdoor water usage by 0.12 MGD. These potential water savings are based on average rainfall conditions; greater water savings should be realized during drought conditions.

The advisory committee made the following recommendations to encourage efficient use of the resource through conservation:

- 4.1 Recommendation/Strategy: The District will promote water conservation for all users of water through, but not limited to, fiscal incentives such as the Alternative Water Supply Funding Program.

Total Cost: Costs are associated with the Alternative Water Supply Funding Program

Funding Source: SFWMD and local sponsor

Cost	FY98	FY99	FY00	FY01	FY02
Dollars (\$1,000s)	---	---	---	---	---

Implementing Agency: SFWMD

Subtasks:

- 4.1.a. Solicit indoor water conservation measures (toilet and showerhead retrofit).
 - 4.1.b. Solicit outdoor water conservation measures (higher efficiency irrigation systems).
 - 4.1.c. Develop a cooperative approach with the NRCS to promote conversion of flood irrigation to micro-irrigation, including financial incentives.
- 4.2. Recommendation/Strategy: The District will provide cost-share funding for Martin County and St. Lucie County urban mobile irrigation laboratory programs and possibly another agricultural mobile irrigation laboratory for the UEC region if the need arises.

Total Cost: \$325,000 per year (\$75,000 for urban lab and \$250,000 for agricultural lab)

Funding Source: SFWMD (urban - \$50,000, agricultural - \$100,000) and local sponsors (urban - \$25,000, agricultural - \$150,000)

SFWMD share:

Cost	FY98	FY99	FY00	FY01	FY02
Dollars (\$1,000s)	\$25*	\$150	\$150	\$150	\$150

*Co-funded with NRCS for Martin County urban mobile irrigation laboratory only.

Implementing Agency: SFWMD and local sponsors

Subtasks:

- 4.2.a. Seek local sponsors for future cost-share funding.

Wastewater Reuse

Regional wastewater utilities in the UEC Planning Area have projected wastewater flows to increase to approximately 43 MGD through the planning horizon. However, based on minimal increases in wastewater flows from 1993 to 1996, it is doubtful this projection will be realized within the planning horizon. In 1996, about 3.5 MGD (26 percent) of the 13 MGD processed by these facilities was reused. Assuming the projections of the utilities are realized, approximately 40 MGD of additional reclaimed water could be made available for reuse through the planning horizon.

The advisory committee made the following recommendations to support water resource development through wastewater reuse:

- 5.1. Recommendation/Strategy: The District will develop regulatory and fiscal incentives, such as the Alternative Water Supply Funding Program, for reuse in the UEC Planning Area. Reuse projects that can expand the regional water resources may be considered as a water resource development project.

Total Cost: Costs are associated with the Alternative Water Supply Funding Program

Funding Source: SFWMD and local sponsor

Cost	FY98	FY99	FY00	FY01	FY02
Dollars (\$1,000s)	---	---	---	---	---

Implementing Agency: SFWMD

Subtasks:

- 5.1.a. Solicit reuse projects for the Alternative Water Supply Funding Program.

- 5.2. Recommendation/Strategy: The District will encourage utilities to evaluate reclaimed water system interconnects to increase reuse in potential problem areas.

Total Cost: 0.05 FTEs

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	0.01	0.01	0.01	0.01	0.01

Implementing Agency: SFWMD

Subtasks: Not applicable

- 5.3. Recommendation/Strategy: The District will adopt rules implementing the requirements of Section 373.250, F.S. related to wastewater reuse and back-up sources.

Total Cost: Cost incorporated in Recommendation 7.1 of Related Strategies

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	---	---	---	---	---

Implementing Agency: SFWMD

Subtasks: See Recommendation 7.1 of Related Strategies

- 5.4. Recommendation/Strategy: The District will provide assistance for reclaimed water projects that involve ground water recharge and indirect potable reuse, and will assume the lead role for such projects that are of regional significance.

Total Cost: 0.05 FTEs

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	0.01	0.01	0.01	0.01	0.01

Implementing Agency: SFWMD

Subtasks: Not applicable

- 5.5. Recommendation/Strategy: The District will discuss with the FDEP, and participate in rulemaking, standards for reclaimed water quality for ground water recharge, indirect potable reuse projects, and wet weather disposal.

Total Cost: 0.16 FTEs

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	0.04	0.03	0.03	0.03	0.03

Implementing Agency: SFWMD

Subtasks:

- 5.5.a. Continue to participate in rulemaking activities associated with Chapter 62-610, F.A.C. Reuse of Reclaimed Water and Land Applications.
- 5.5.b. Continue to participate on the statewide Reuse Coordinating Committee.
- 5.5.c. Continue to conduct regular coordination meetings with FDEP.

Utility Interconnects

The quantity of water that could be made available from utility interconnects needs to be evaluated on a project-by-project basis. It will decrease projected withdrawals of one utility and increase withdrawals for the other. The water available for transfer depends on the sources used by the supplying utility as well as the capacity of their facilities.

The advisory committee made the following recommendations to support water resource development through utility interconnects:

- 6.1. Recommendation/Strategy: The District will encourage potable water interconnections between utilities for emergency purposes and evaluation of interconnections for water supply purposes.

Total Cost: 0.05 FTEs

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	0.01	0.01	0.01	0.01	0.01

Implementing Agency: SFWMD

Subtasks: Not applicable

Related Implementation Strategies

The advisory committee also recommended the following strategies to implement the UEC Water Supply Plan. Most of these strategies involve incorporation of the modeling assumptions used in development of this plan into the consumptive use permitting program, through a subsequent rulemaking effort.

- 7.1. Recommendation/Strategy: The District will incorporate the following assumptions and criteria used in development and findings of the UEC Water Supply Plan into the District's consumptive use permitting program, including any rulemaking:
- (a) Incorporate a uniform level of drought in the consumptive use permitting program to determine the supplemental needs of all users in the UEC Planning Area. The statistical 1-in-10 drought condition for the seven rainfall stations used in this plan should be utilized in this determination.
 - (b) Incorporate the resource protection criteria used in this plan, as may be modified/refined during the rulemaking process, into the District's consumptive use permitting program.

The criteria used in this plan are:

1. Wetlands. Cumulative ground water level drawdowns induced by pumping withdrawals in areas that are classified as a wetland should not exceed 1 foot at the edge of the wetland for more than 1 month during a 12-month dry rainfall event that occurs as frequently as once every 10 years.
 2. Floridan Aquifer. Cumulative ground water level drawdowns induced by water use withdrawals should not cause water levels in the Floridan aquifer to fall below land surface any time during a 12-month dry rainfall event that occurs as frequently as once every 10 years. This criterion does not apply to ASR projects. Criteria for ASR projects will be developed during the rulemaking process.
- (c) A cumulative analysis be employed as part of the consumptive use permitting analysis that contains flexibility to deal with local conditions and new technologies to accurately assess if the proposed use is permissible.
- (d) Develop and adopt appropriate water shortage triggers for resource protection, where necessary, to be used in conjunction with implementation of the District's Water Shortage Plan (Chapter 40E-21, F.A.C.).
- (e) Modify the following special designations:
1. Reduced Threshold Areas (RTAs). Delete RTA designations (Stuart Peninsula, Lighthouse Point Peninsula, and the Savannas and Jensen Beach Peninsula) in the UEC Planning Area.
 2. Water Resource Caution Areas (WRCAs). Modify WRCA designation in the UEC Planning Area to only incorporate the coastal areas in Martin and St. Lucie counties.
 3. Restricted Allocation Areas. (1) Eliminate the existing 1.5 inch allocation restriction in northwest St. Lucie County; (2) Continue prohibition of no additional water being allocated from, or direct connections to, the C-23, C-24, and C-25 canals over and above existing allocations until District investigations show that additional water is available for allocation; and, (3) Continue the prohibition of pumps on Floridan wells, except for short-term usage during extreme water shortages and freezes.
- (f) Increase regulatory analysis, including ground water monitoring, in areas where vulnerability mapping indicates increased potential for saltwater intrusion.
- (g) Through rulemaking, define the conditions upon which a 20-year permit may be issued.

Total Cost: 2.15 FTEs

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	0.00	0.90	1.25	0.00	0.00

Implementing Agency: SFWMD

Subtasks:

- 7.1.a. Request Governing Board authorization for rule development by April 1999.
 - 7.1.b. Present draft rule to Governing Board to initiate rulemaking by December 1999.
 - 7.1.c. Present final rule to Governing Board for adoption by April 2000.
- 7.2. Recommendation/Strategy: The District will continue coordination of the UEC Water Supply Plan with local governments/utilities, the SJRWMD and the Feasibility Study.

Total Cost: 0.25 FTEs

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	0.05	0.05	0.05	0.05	0.05

Implementing Agency: SFWMD

Subtasks:

7.2.a. Continue meeting with local governments, utilities, and other agencies throughout the plan implementation period.

- 7.3. Recommendation/Strategy: Continue ongoing District wetland drawdown study.

Total Cost: \$532,000

Funding Source: SFWMD

Cost	FY96	FY97	FY98	FY99	FY00	FY01	FY02
Dollars (\$1,000s)	\$75	\$208	\$82	\$55	\$56	\$56	\$0

Implementing Agency: SFWMD

Subtasks:

- 7.3.a. Establish long-term monitoring sites at wetlands in the UEC Planning Area by July 1996 - completed.
- 7.3.b. Complete installation and instrumentation of monitoring wells at UEC sites by February 1997 - completed.
- 7.3.c. Complete analysis of historical aerial photography for UEC study areas by April 1997 - completed.
- 7.3.d. Complete installation of weather stations at UEC study areas by May 1997 - completed.
- 7.3.e. Complete biological inventories of UEC sites by June 1997 - completed.
- 7.3.f. Complete analysis and evaluation of hydrologic data from first wet-dry cycle by July 1998.
- 7.3.g. Complete intensive study of wetland-aquifer interactions in UEC sites by August 1998 (Initiated 8/97).
- 7.3.h. Complete intensive pilot-scale biological monitoring in UEC sites by September 1998.
- 7.3.i. Convene scientific workshop to review findings to date and make recommendations for wetland drawdown rules or further research and monitoring by December 1998.
- 7.3.j. Continue hydrobiological monitoring at all sites through at least October 2001.

- 7.4. Recommendation/Strategy: Wetland mitigation associated with projects in the UEC Planning Area should remain in the region. Additionally, it is recommended that a mitigation bank be established in the UEC region.

Total Cost: 0.02 FTEs

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
FTEs	0.01	0.01	0.00	0.00	0.00

Implementing Agency: SFWMD

Subtasks: Not applicable

- 7.5. Recommendation/Strategy: The District should fund implementation of the UEC Water Supply Plan. It should be recognized that several of these recommendations will result in water resource development projects, especially Recommendation 1.1, implementation of the Indian River Lagoon Restoration Feasibility Study.

Total Cost: Indicated in previous recommendations

Funding Source: SFWMD

Cost	FY98	FY99	FY00	FY01	FY02
Dollars (\$1,000s)	---	---	---	---	---

Implementing Agency: SFWMD

Subtasks: Indicated in previous recommendations

Summary of Water Resource Development Recommendation Costs

A summary of the water resource development recommendation costs is included in Table 23. Costs are described in terms of both dollars and full-time equivalencies (FTEs). In most cases, dollars do not include the cost of District staff. Where cooperative efforts with other agencies are involved, the dollars in the table reflect only the District's share. FTEs represent the estimated hours to be worked by District staff.

Dashes appear in the table where the associated costs or FTEs are included within the scope of another recommendation or program. Three examples of this are:

- (1) The costs or FTEs are within the scope of another study. There are three examples in the table (2.1, 2.6, and 2.7) where the dashes indicate that the costs are within the scope of the Feasibility Study. The overall cost of the Feasibility Study is captured in Recommendation 1.1. In addition, Recommendation 3.5 will be incorporated into the scope of the Kissimmee Basin Water Supply Plan.

- (2) The costs or FTEs will be funded through the Alternative Water Supply Funding Program. There are two examples of this in the table (4.1 and 5.1).
- (3) The costs or FTEs will be incorporated into the rulemaking process. There are two examples of this in the table (2.5 and 5.3) where the costs and subtasks are captured in Recommendation 7.1, which outlines the rulemaking process.

The total cost of the plan recommendations varies, depending on whether Recommendation 3.2 (Floridan aquifer monitoring network) is implemented in-house or contracted to a consultant. If implemented in-house, the total cost of the plan recommendations would be \$20.62 million and 18.85 FTEs. If, on the other hand, Recommendation 3.2 were to be contracted out, the total cost of the plan recommendations would be \$20.79 million and 17.45 FTEs. Although contracting out would be more expensive, the wells could be constructed by FY 2000 - approximately two years earlier than if done in-house.

Table 23. Summary of Water Resource Development Recommendation Costs.

Rec.	Previous Costs (\$1,000s) and FTEs				Plan Implementation Period Costs (\$1,000s) and FTES										Total Cost	
	FY96		FY97		FY98		FY99		FY00		FY01		FY02			
	\$	FTE	\$	FTE	\$	FTE	\$	FTE	\$	FTE	\$	FTE	\$	FTE	\$	FTE
Surface Water Storage																
1.1* [†] ▲	\$96	0.00	\$775	0.00	\$1,408	0.00	\$531	0.00	\$217	0.00	\$42	0.00	\$0	0.00	\$3,069	0.00
1.2 [▲]					\$0	0.00	\$0	0.00	\$0	0.20	\$0	0.00	\$0	0.00	\$0	0.20
1.3 [†]			\$0	0.00	\$100	0.00	\$3,500	0.00	\$3,500	0.00	\$6,500	0.00	\$1,400	0.00	\$15,000	0.00
1.4					\$100	2.00	\$10	1.75	\$0	1.50	\$0	0.50	\$0	0.00	\$110	5.75
1.5					\$0	0.00	\$79	0.15	\$0	0.00	\$0	0.00	\$1,000	4.00	\$1,079	4.15
Subtotal	\$96	0.00	\$775	0.00	\$1,608	2.00	\$4,120	1.90	\$3,717	1.70	\$6,542	0.50	\$2,400	4.00	\$19,258	10.10
Aquifer Storage and Recovery																
2.1					---	---	---	---	---	---	---	---	---	---	---	---
2.2					\$0	0.00	\$0	0.00	\$0	0.03	\$0	0.00	\$0	0.00	\$0	0.03
2.3					\$0	0.00	\$10	0.06	\$0	0.00	\$0	0.00	\$0	0.00	\$10	0.06
2.4					\$0	0.02	\$0	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0	0.02
2.5					---	---	---	---	---	---	---	---	---	---	---	---
2.6					---	---	---	---	---	---	---	---	---	---	---	---
2.7					---	---	---	---	---	---	---	---	---	---	---	---
Subtotal	\$0	0.00	\$0	0.00	\$0	0.02	\$10	0.06	\$0	0.03	\$0	0.00	\$0	0.00	\$10	0.11
Floridan Aquifer																
3.1					\$0	0.04	\$0	0.01	\$0	0.00	\$0	0.00	\$0	0.00	\$0	0.05
3.2.A					\$0	0.11	\$0	1.15	\$78	2.52	\$64	1.25	\$18	0.70	\$160	5.73
3.2.B					\$0	0.11	\$0	1.15	\$112	1.62	\$199	0.75	\$12	0.70	\$323	4.33
3.3 [†]					\$37	0.02	\$0	0.02	\$0	0.02	\$0	0.02	\$0	0.02	\$37	0.10
3.4					\$0	0.02	\$0	0.01	\$0	0.00	\$0	0.00	\$0	0.00	\$0	0.03
3.5					--	---	---	---	---	---	---	---	---	---	---	---
Subtotal																
with 3.2.A	\$0	0.00	\$0	0.00	\$37	0.19	\$0	1.19	\$78	2.54	\$64	1.27	\$18	0.72	\$197	5.91
with 3.2.B	\$0	0.00	\$0	0.00	\$37	0.19	\$0	1.19	\$112	1.64	\$199	0.77	\$12	0.72	\$360	4.51

*See Recommendation 1.1 for cost breakdown between dollar costs and in-kind services.

†Cost-shared/cooperative effort with other agencies.

▲Potential water resource development capital projects and expenditures following completion of the IRL Feasibility Study.

Table 23. (Continued).

Rec. Cost	Previous Costs (\$1,000s) and FTEs				Plan Implementation Period Costs (\$1,000s) and FTEs												Total Cost	
	FY96		FY97		FY98		FY99		FY00		FY01		FY02					
	\$	FTE	\$	FTE	\$	FTE	\$	FTE	\$	FTE	\$	FTE	\$	FTE	\$	FTE		
Conservation																		
4.1					---	---	---	---	---	---	---	---	---	---	---	---		
4.2†					\$25	0.00	\$150	0.00	\$150	0.00	\$150	0.00	\$150	0.00	\$625	0.00		
Subtotal	\$0	0.00	\$0	0.00	\$25	0.00	\$150	0.00	\$150	0.00	\$150	0.00	\$150	0.00	\$625	0.00		
Wastewater Reuse																		
5.1					---	---	---	---	---	---	---	---	---	---	---	---		
5.2					\$0	0.01	\$0	0.01	\$0	0.01	\$0	0.01	\$0	0.01	\$0	0.05		
5.3					---	---	---	---	---	---	---	---	---	---	---	---		
5.4					\$0	0.01	\$0	0.01	\$0	0.01	\$0	0.01	\$0	0.01	\$0	0.05		
5.5					\$0	0.04	\$0	0.03	\$0	0.03	\$0	0.03	\$0	0.03	\$0	0.16		
Subtotal	\$0	0.00	\$0	0.00	\$0	0.06	\$0	0.05	\$0	0.05	\$0	0.05	\$0	0.05	\$0	0.26		
Utility Interconnects																		
6.1					\$0	0.01	\$0	0.01	\$0	0.01	\$0	0.01	\$0	0.01	\$0	0.05		
Subtotal	\$0	0.00	\$0	0.00	\$0	0.01	\$0	0.01	\$0	0.01	\$0	0.01	\$0	0.01	\$0	0.05		
Related Implementation Strategies																		
7.1					\$0	0.00	\$0	0.90	\$0	1.25	\$0	0.00	\$0	0.00	\$0	2.15		
7.2					\$0	0.05	\$0	0.05	\$0	0.05	\$0	0.05	\$0	0.05	\$0	0.25		
7.3	\$75	0.00	\$208	0.00	\$82	0.00	\$55	0.00	\$56	0.00	\$56	0.00	\$0	0.00	\$532	0.00		
7.4					\$0	0.01	\$0	0.01	\$0	0.00	\$0	0.00	\$0	0.00	\$0	0.02		
7.5					---	---	---	---	---	---	---	---	---	---	---	---		
Subtotal	\$75	0.00	\$208	0.00	\$82	0.06	\$55	0.96	\$56	1.30	\$56	0.05	\$0	0.05	\$532	2.42		
Total with 3.2.A	\$171	0.00	\$983	0.00	\$1,752	2.34	\$4,335	4.17	\$4,001	5.63	\$6,812	1.83	\$2,568	4.83	\$20,622	18.85		
with 3.2.B	\$171	0.00	\$983	0.00	\$1,752	2.34	\$4,335	4.07	\$4,035	4.73	\$6,947	1.38	\$2,562	4.83	\$20,785	17.45		

[†]Cost-shared/cooperative effort with other agencies.

WATER SUPPLY DEVELOPMENT PLAN SUGGESTIONS

During the planning process, the advisory committee identified numerous opportunities for the plan to provide guidance to local governments and utilities on ways to address water supply development opportunities. The committee and staff decided to break out these suggestions into a separate section of this chapter and call it “Plan Suggestions.” These are intended to identify projects or studies that local governments or utilities can undertake to further water supply goals. They also include considerations that should be incorporated into water supply development projects.

Surface Water Storage

- 1.1. Plan Suggestion: Water supply benefits (recharge) should be considered when designing storm water storage/treatment areas. Consideration for funding should be given to projects incorporating surface water storage meeting predevelopment runoff.
- 1.2. Plan Suggestion: Chapter 298 Districts should be encouraged to incorporate water supply in their Water Control Plans to the extent practicable.
- 1.3. Plan Suggestion: Prioritize storm water projects that have beneficial ground water recharge.
- 1.4. Plan Suggestion: Identify developments that lower the ground water table.
- 1.5. Plan Suggestion: New or widening roadway projects should include retention/ detention, and ground water recharge/water supply design elements without compromising the structural integrity of the road.
- 1.6. Plan Suggestion: Participate in and support the Restudy Joint Coordination Committee (Martin and St. Lucie counties), which is charged with being involved in the Feasibility Study, and making reports to both counties and agencies.

Aquifer Storage and Recovery

- 2.1. Plan Suggestion: Explore treated and untreated water ASR, among other options, to supplement existing water supply sources in order to meet future demands.
- 2.2. Plan Suggestion: Continue working with EPA and FDEP to explore rule changes in federal and state underground injection control program to allow for (and encourage) injection of untreated surface and ground water with ASR.

Floridan Aquifer

- 3.1. Plan Suggestion: Evaluate potential of using Floridan aquifer to meet future demands, where appropriate.
- 3.2. Plan Suggestion: Evaluate desalination concentrate disposal options.
- 3.3. Plan Suggestion: Local users should coordinate their plans with adjoining utilities, as well as the UEC Water Supply Plan.

Surficial Aquifer Expansion

- 4.1. Plan Suggestion: The potential of using the Surficial Aquifer System for new and expanded uses should be evaluated on a project by project basis.
- 4.2. Plan Suggestion: Encourage development of alternative water sources that reduce the reliance on the Surficial Aquifer System.

Conservation

- 5.1. Plan Suggestion: Utilities and local governments should implement all public water supply mandatory conservation measures.
- 5.2. Plan Suggestion: Seek funding for urban and agricultural mobile irrigation laboratories in Martin and St. Lucie counties.
- 5.2. Plan Suggestion: Implement higher efficiency irrigation systems and other conservation measures where effective.
- 5.4. Plan Suggestion: Encourage use of alternative water sources for nonpotable uses, versus using potable water.

Wastewater Reuse

See Example Projects under Water Supply Development later in this chapter.

Utility Interconnects

- 6.1 Plan Suggestion: Utilities should evaluate the potential to interconnect reclaimed water systems to transfer reclaimed water from surplus areas to deficit areas.

FUNDING

This section addresses the funding approach for the Upper East Coast Water Supply Plan. The approach takes into account recent changes made to the state water law during the 1997 legislative session, feedback and comments from the UECWSP Advisory Committee members, and input from District staff.

In general, the funding approach is divided into two major categories: water resource development and water supply development. The water resource development category deals with the funding approach for projects that are primarily the responsibility of the South Florida Water Management District. Water supply development projects, on the other hand, are primarily the responsibility of local governments, utilities, and other users.

Water Resource Development

The 1997 Florida legislature provided the following definition for water resource development in the amendments made to Chapter 373, F.S:

“Water resource development” means the formulation and implementation of regional water resource management strategies, including the collection and evaluation of surface water and groundwater data; structural and nonstructural programs to protect and manage water resources; the development of regional water resource implementation program; the construction, operation, and maintenance of major public works facilities to provide for flood control, surface and underground water storage, and ground water recharge augmentation; and related technical assistance to local governments and to government-owned and privately owned water utilities (Section 373.019(19)).

The amended statute goes on to state that the water supply plan must contain a water resource development component that includes a listing of water resource development projects. In

addition, each listed project must include, among other things, sources of funding and funding needs (Section 373.0361(2)(b)).

Chapters 5 and 6 of this plan identify a series of proposed water resource development projects. These projects are primarily the responsibility of the District, and each recommendation/strategy includes an estimated cost and funding source. Table 24 identifies a series of potential water resource development funding options originally established in the Governor's Water Supply Development and Funding Report (1997). It appears that most of the recommendations in this plan can be funded through existing sources, except for specific projects that may be recommended by ongoing studies.

The amended statute also requires each water management district governing board to include in its annual budget the amount needed for the fiscal year to implement water resource development projects, as prioritized in its regional water supply plans. Therefore, the advisory committee strongly recommends that the District Governing Board refer to this plan during each annual budget to identify priority projects to be included in the District's annual budget.

Table 24. Potential Water Resource Development Funding Options.

Option	Who collects	Who Pays?	Who Spends?	Estimated Amount	Requirements
Allocate portion of doc stamp	County tax Collector to DOR	Real estate & loan financing customers	Legislature	96/97 total-826M 188.6M to Gen Rev potentially available for water resource development	Legislative reallocation
Statewide removal of sales tax exemption on bottled water	State (DOR)	Public (end consumers and water users)	WMDs	Not yet determined	Legislative authorization
Increase WMD ad valorem tax statutory caps *NWFWMDC constitutional cap limit	County tax collector to WMDs	Property owners in the district	WMDs	\$87.5M/yr for all 5 districts based on legislative cap. **** \$101.6M state wide in addition to 87.5M above based on constit. cap.	Legislative authorization May impact funding of existing projects that require future increases in funding. e.g.- Everglades Required legislative authorization to constit. cap.
New ad-valorem tax	County tax collectors to WMDs and/or local govt.	Property owners in WMD	WMDs and/or local govt.	To be determined	Constitutional amendment
Water Use fee	WMDs	Consumptive use permit holders	WMDs	Depends on rate per 1000 gal. Assessed e.g. \$.25/1000 gal if all dist levied generated \$266.9M/yr for public supply	Legislative authorization
Water use fees unmetered					
Statewide removal of sales tax exemption on wells and utilities water sales	State (DOR)	Public (end consumers and water uses)	WMDs	270M/yr (est at 6%)	Legislative authorization
State wide gross receipts tax on water	State (DOR)	Utility – is passed on to customers	WMDs	Depends on rate. If 2.5% is used, could be 110M/yr.	Legislative authority
Regulatory fees	State or Co.	Permit recipient	State or Co.	Estimated amount minimal	Legislative authorization and/or county ordinance
Franchise fees	State or local govt.	Franchise passed to customer	State or local govt.	To be determined	Legislative authorization and/or contract agreement
New taxes general revenue	DOR	Citizens	Legislature	To be determined	Legislative authorization and approp. Congressional appropriation
Congressional appropriation	IRS	Citizens of the U.S.	State/WMD	To be determined could be substantial	Congressional authorization and approp.

Source: Governor's Water Supply Development and Funding Report (1997).

Water Supply Development

Water supply development was defined by the 1997 Florida legislature as:

“Water supply development” means the planning, design, construction, operation, and maintenance of public or private facilities for water collection, production, treatment, transmission, or distribution for sale, resale, or end use (Section 373.019(21)).

The statute goes on to state that, “local governments, regional water supply authorities, and government-owned and privately owned water utilities take the lead in securing funds for and implementing water supply development projects. Generally, direct beneficiaries of water supply development projects should pay the costs of the projects from which they benefit, and water supply development projects should continue to be paid for through local funding sources” (Section 373.0831(2)(c)).

It is not the intent of the legislature for regional water supply plans to mandate actions to be taken by local agencies, utilities, and other water users. Therefore, the overall theme of this section is to provide direction and assistance, but not to mandate directives to local governments or utilities.

This plan addresses the funding of water supply development projects in three ways: (1) general plan suggestions to local governments and utilities; (2) the District sponsored and funded Alternative Water Supply Funding Program, and (3) other potential funding sources.

Plan Suggestions

Plan suggestions provide guidance to local governments and utilities on ways to address water supply development opportunities. These are intended to identify projects or studies that local governments or utilities can undertake to further water supply goals. They also include considerations that should be incorporated into water supply development projects.

Alternative Water Supply Funding Program

In response to recent legislative requirements and in recognition of ongoing District efforts, the District established an Alternative Water Supply Funding Program. Funding for this program comes from a dedicated portion of the District’s ad valorem generated budget. The focus and intent of the program is to provide financial assistance to local governments, public or private utilities, and other users for implementation of projects that are consistent with regional water supply plans.

The Alternative Water Supply Funding Program is a cost-share program meaning that any participating agency or group must provide a portion of the funding for the project. The District publishes guidelines for implementing this program that are consistent with the statutory

language provided below. These guidelines, which are available at the District's service centers, address the application and review process, ranking criteria, and the time frame for implementation.

To support the Alternative Water Supply Funding Program and to provide further direction on how the program should be applied in the Upper East Coast region, this water supply plan does two things: First, it provides the statutory requirements for administering the program. Second, examples of the types of projects that would be considered consistent with the program and this water supply plan are identified. The intent of identifying example projects is not to guarantee funding for these projects, nor is the intent to limit funding for only these specific projects. Instead, the intent is to give examples of the types of projects that might be eligible for funding under the Alternative Water Supply Funding Program and that are consistent with this water supply plan.

Statutory Requirements. The District has been engaged in cooperative funding programs for alternative water supply projects since the mid-1980s. These programs were formalized by the Florida Legislature in 1995 when it enacted the Alternative Water Supply Funding Act. The intent of this legislation was to encourage water management districts to share a portion of their ad valorem revenues with water users and provide for the development of alternative water supplies. In 1997, the Legislature further refined the District's funding program by distinguishing between water resource development and water supply development in House Bill 715. For purposes of the District's Alternative Water Supply Funding Program, the following statutory language provides the framework for guidelines and criteria:

Alternative Water Supply Funding Act

The following requirements for funding eligibility are codified in Section 373.1961(2):

- The project must be consistent with local government plan
- The local government must require all appropriate new facilities within the project service area to connect and use the project's alternative water supplies
- Funding support shall be applied only for the capital or infrastructure costs for the construction for alternative water supply systems
- The project must service one or more water resource caution areas
- The project must fall within guidelines established by the district

House Bill 715:

The following requirements were established by House Bill 715 and are now contained in Section 373.0831(4)(a):

Water supply development projects which are consistent with the relevant regional water supply plans and which meet one or more of the following criteria shall receive priority consideration for state or water management district funding assistance:

- The project supports establishment of a dependable, sustainable supply of water which is not otherwise financially feasible;
- The project provides substantial environmental benefits by preventing or limiting adverse water resource impacts, but require funding assistance to be economically competitive with other options; or
- The project significantly implements reuse, storage, recharge, or conservation of water in a manner that contributes to the sustainability of regional water sources.

“Water supply development projects which meet the criteria in paragraph (a) and also bring about replacement of existing sources in order to help implement a minimum flow or level shall be given first consideration for state or water management district funding assistance” (Section 373.0831(4)(b)).

Example Projects. Following is a list of example projects that might be considered for participation in the District’s Alternative Water Supply Funding Program. These examples were compiled from advisory committee meetings and staff discussions. It is important to reemphasize that the list is not intended to guarantee that these projects would be approved for District funding, nor does the list imply that funding is limited to only these projects. Instead, the list is intended to provide guidance to local governments and public and private utilities on the types of projects that would be eligible for participation in the program.

- Development of wastewater reuse programs.
- Development of aquifer storage and recovery (ASR) technology to supplement water supply.
- Development of alternative desalination concentrate disposal options.
- Implementation of water supply conservation measures.
- Implementation of utility interconnects for water supply and emergency purposes.
- Construction of stormwater retention/detention systems to minimize excess runoff, and thereby increase ground water recharge, by incorporating maximum volume discharges along with maximum rate discharges.
- Development of alternative water source options, such as the Floridan aquifer and reverse osmosis treatment.

Other Funding Sources

The third and final way that this plan addresses funding of water supply development projects is by identifying other potential funding sources. The Governor's Water Supply Development and Funding Report (1997) provides an excellent listing of potential funding options for water supply development. This listing is presented in Table 25.

Table 25. Potential Water Supply Development Funding Options.

Option	Who Collects	Who Pays?	Who Spends?	Estimated Amount	Requirements
*Water conservation rate structure	Government owned and privately owned water utilities	Utility customer	Local govt./utilities	Could be designed to generate any targeted \$\$ amount needed	Legislative authority to PSC for Investor owned utilities. Local ordinance by governing body for implementation
*Statewide removal of sales tax exemption on bottled water	State (DOR)	Public (end consumer and water users)	WMDs	Not yet determined	Legislative authorization
*Local option removal of sales tax exemption on wells and utilities water sales	State (DOR)	Public (end consumer)	Government owned and privately owned water utilities	\$270 M/yr (est at 6% statewide). Local amounts would vary based on local implementation)	Legislative repeal exemption from 6% sales tax on water, bottled water and utility provided water
*Local option gross receipts tax on water	State (DOR)	Utility – is passed on to customers	Government owned and privately owned water utilities	Depends on rate. If 2.5% is used, could be 10M/yr	Legislative authorization
Private investment	Investor owner utilities	Private investors or private/public partners	IOUs and partners	Unlimited	
Special assessments	Local govt.	Property owners in affected area	Local govt.	To be determined	Local ordinance/referendum
Water rate increases	Local govt.	End consumers and water users	Local govt.	To be determined	Local govt. decision

*New sources of funding.

Source: Governor's Water Supply Development and Funding Report (1997).